

PURDUE UNIVERSITY
School of Electrical Engineering
ECE 301 Signals and Systems, Section 004
Class Information
Spring 2024

Prerequisites: EE 202 (Linear Circuit Analysis II)

Instructor: Professor Michael Zoltowski
MSEE 318
765 494-3512
email: mikedz@purdue.edu OR: michael.zoltowski@gmail.com

Course TA::
Arnav Singh

office: **BHEE 209** office hours:

***Wednesday 17:30-19:30, Thursday 16:00-18:00, Friday 16:00-18:00. Tables 1,2
in Room BHEE 209.***

email: sing1272@purdue.edu

Course Web Site: <https://engineering.purdue.edu/~mikedz/ee301/ee301.html>

Lecture Schedule: MWF 2:30-3:20 PM in Lawson B155

Help/Office Sessions:

See information above

Zoltowski's Office Hours MSEE 318: TBD

Required Text:

Signals and Systems, (2nd Ed.), A. V. Oppenheim, A. S. Willsky with S. H. Nawab, Prentice-Hall, Inc., New Jersey, ISBN 0-13-814757-4, 1997.

Supplementary Text: (will NOT be used this semester):

Signals and Systems, 3rd edition, N. Levan, Optimization Software, Inc., New York, ISBN 0-911575-63-4, 1992.

Course Outcomes:

- A student who successfully fulfills the course requirements will have demonstrated:
- i. An ability to classify signals and systems.

- ii. A knowledge of impulse response functions and convolution for linear systems.
- iii. A knowledge of Fourier series and periodic signals.
- iv. An understanding of Fourier transforms for linear time invariant systems and the basics of sampling and its applications.
- v. A knowledge of discrete time signals systems and transforms.

Lecture:

ATTENDANCE IN CLASS IS MANDATORY AND WORTH 5% OF YOUR FINAL GRADE. Lectures will not be recorded – you must come to class. ALSO, YOU NEED TO BUY THE REQUIRED OPPENHEIM AND WILLSKY TEXT AND BRING IT TO CLASS. THE EXAMS WILL BE OPEN-BOOK. This course will draw almost exclusively from the required text. In order to have more time for (1) working out examples in class (not in textbook) including starting some of the assigned homework problems during class, (2) in-class help sessions prior to each midterm exam where we work through one of my old exams, and (3) doing an occasional Matlab demo in class, I have scanned in much of the required Oppenheim & Willsky text as pdf files posted at the course web site. This way we can cover the new theory each class in a time-efficient manner (for example, I won't have to redraw in class the illustrative figures that are already well-done in the textbook) and we can cover the examples in the textbook quickly as well. For this to work well, you should bring your copy of the required textbook (O&W) to each class! Again, the exams will be open book. Thus, you need to buy the required Oppenheim Willsky (O&W) text.

Homework:

Homework will be assigned on a weekly basis. **Assignments will be due in class – homeworks will not be accepted after class except if there are severe extenuating circumstances.** The assignments will be distributed via the course web page. No late assignments will be accepted.

You must upload the assignments as a single pdf file. This is free software online to merge pictures together into a single pdf file. There is also an app for your smart phone to do the same. I think there are scanners in the library as well. Please do the problems in order to facilitate the grading for such a large course.

The homework is a very important part of the course. You may read your lecture notes and the text, and think that you understand the material. However, when you attempt to work the homework problems, you will frequently find that you actually did not understand the material as well as you thought you did. Also, the problems on the exams will be similar to the homework problems, thereby assisting in the exam preparation process.

While it is perfectly reasonable to discuss your approach to solving the problems with a friend, the final write-up of the solution must be your own work. However, you will benefit most from the homework if you attempt to do the problems *before* consulting your friends.

Homework Assignments:

Homework will be scanned in and uploaded to either Brightspace or Gradescope.

MATLAB:

Knowledge of MATLAB will be a helpful part of this course. MATLAB will NOT be required for solving weekly homework assignments but Matlab based demonstrations of the theory will be done in class on a regular basis.

Examinations:

There will be three mid-term exams. The dates for these exams are TENTATIVE, but will be fixed shortly at which point they cannot be changed.

F February 16	In Class	TBA
F Mar 22	In Class	TBA
F April 19	In Class	TBA

Schedule your plant trips and interviews so that they do not conflict with these dates. ***You will not be allowed to make up a mid-term exam if you miss it. Not showing up at an exam should be the result of extreme extenuating circumstances – getting checked out at PUSH does NOT constitute an extreme extenuating circumstance, unless they recommend that you be admitted to a hospital. Writing me e-mail and saying that you don't feel well will NOT excuse you from coming to an exam. If you do not show up for an exam and are either not violently ill (with detailed documentation) or dealing with extreme extenuating conditions, you will receive a 0 for that exam. If you are violently ill or dealing with extreme extenuating conditions and have detailed official documentation, your score on your final exam will be also used for the exam you miss. If you can't make an exam due to either of the above extreme conditions, you should make every attempt humanly possible to contact me before the exam. If before the exam is not possible, then as soon as possible after the exam.***

IT IS IMPORTANT TO ATTEND EACH AND EVERY CLASS. A SIGN-IN SHEET WILL BE CIRCULATED EACH CLASS. ALSO, YOU NEED TO BUY THE REQUIRED OPPENHEIM & WILLISKY TEXT AND BRING IT TO CLASS. THE EXAMS WILL BE OPEN-BOOK.

Help Session:

We will be holding weekly help sessions. During the weeks during which an exam will be given, the help session will serve as a review for the exam. You will benefit from attending this help session, not only because you can get answers to your questions; but also because you can learn what questions your classmates have, and what the answers are for those questions, as well. You will benefit much more from the help session if you try to work the problems in advance, and come prepared with questions.

Computation of Final Grade:

Your final grade will be determined as a weighted combination of your homework, mid-term exams, and final exam. Your letter grade will be based solely on your weighted final grade. This means that failure to do the homework assignments can definitely hurt your grade, regardless of how well you do on the exams.

Homework	10%
Attendance	5%
3 Midterms	20% each (60% total)
Final exam	25%

If you dispute your grade on any homework or hour exam, you have *one week* from the date that the graded paper was returned to you to request a change in the grade. After this time, no

further change in grade will be considered. When you return your paper for a re-grade, please attach a sheet to the front, indicating where you think that your paper was graded incorrectly. Also, date the sheet.

Each problem of each exam will be assigned to one or more of the five outcome categories. At the end of the course, the total score will be tallied for each student's five outcome categories. **Any student who does not meet a minimum performance standard for one of the five outcome categories will receive a failing grade for the entire course.**

Academic Dishonesty

The ECE faculty expect every member of the Purdue community to practice honorable and ethical behavior both inside and outside the classroom. Any actions that might unfairly improve a student's score on homework, quizzes, labs, or examinations will be considered cheating and will not be tolerated. Examples of cheating include (but are not limited to):

- Sharing results or other information during an examination.
- Bringing forbidden material or devices to an examination.
- Working on an exam before or after the official time allowed.
- Requesting a re-grade of answers or work that has been altered.
- Submitting homework that is not your own work, or engaging in forbidden homework collaborations.
- Representing as your own work anything that is the result of the work of someone else.

At the professor's discretion, cheating on an assignment, or examination will result in ***a failing grade for the entire course***, or a reduced grade, or a zero score for the particular assignment, or exam. All occurrences of academic dishonesty will be reported to the Assistant Dean of Students and copied to the ECE Assistant Head for Education. If there is any question as to whether a given action might be construed as cheating, please see the professor or the TA before you engage in any such action.

Campus Closing/Disruption of Classes:

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. In such an event, information will be provided through Blackboard Learn.